

The Contribution of National Fisheries Policy Implementation to Economic Security Management between Kenya and Uganda

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Abstract

The global agenda for natural resource management espouses the principle that disputes between riparian states are resolved in a peaceful manner. The management of economic security on Lake Victoria transboundary disputes between Kenya-Uganda which are about resources within the maritime zone has been negatively affected by transboundary dispute since resolutions on the same do not focus on the economic security aspect. This paper evaluates the contribution of national fisheries policy implementation to economic security management between Kenya and Uganda. Structural-functional, social conflict and John Burton's conflict resolution theory guided the study. The study employed descriptive research design while purposive and simple random sampling techniques were used to determine samples. Philosophically, the study contributed towards a better understanding of the transboundary disputes and their management as well as forming a basis for future research. Study findings indicated that statutory instruments regulate fishing operations or the conduct of fishing as public revenues of both Kenya and Uganda on Lake Victoria. The study recommends a robust reform in the national policies on fishery by both Kenya and Uganda to militate against the Lake Victoria transboundary dispute and bolster economic security management. The statutory instruments for fishing should be revised to provide an enabling fishing environment for fishers and fish traders.

Keywords: National fisheries policy; Economic security management; Transboundary dispute.

1. Introduction

Border delimitations issues are rampant in Eastern Africa where heightened tensions and potential discoveries of natural resources on Lakes is common. Lake Victoria transboundary disputes have been manifested before. For instance, the 2009 standoff between Kenya and Uganda over the access rights to fish resources in Lake Victoria is a case in point. Others include the 2008 border incident between Eritrea and Djibouti, and border skirmishes between Uganda and the Democratic Republic of the Congo (DRC) over the oil-rich Lake Albert region. These examples indicate that border disputes are on the rise. In addition to the potential for armed conflict, demarcated, indefinite, porous, and unmanaged boundaries are being used for illegal cross-border activities that threaten national sovereignties and destabilize regional politics. In these transboundary disputes, local communities are denied the opportunities to benefit from exploitation of the natural resources in their locality which increases the intensity of conflict. This mean that economic value of Lake resources are at risk when access rights are denied to less influential groups who may be ignored in management of these resources by involved countries (Okumu, 2010).

The territorial disputes in Lake Victoria are an illustration of the lack of regional arrangements over the sharing of trans-boundary natural resources (water and fish). Beginning in 2003, the exploitation of lake resources has become increasingly contentious, with several incidents resulting in the harassment and arrest of fishers accused of trespassing in the transboundary waters of their neighbours. Moreover, the lake is a chief source of livelihood for many communities in Kenya, Uganda and Tanzania; hence there is a recognised need to find a jointly managed solution for the lake's resources.

Okumu (2010) study succinctly mentions that Lake Transboundary disputes affect management of economic security. In as much as his study explores the line of joint management of transboundary resources; the study fails to touch on the management of economic security of stakeholders involved.

To resolve the dispute, the respective representatives from ministries of the three countries; namely Kenya, Uganda and Tanzania held a meeting in November 2008 in which they agreed to demarcate the boundaries in Lake Victoria using bright beacons, but little progress was made until the eruption of hostilities over Migingo Island which almost brought the two neighbours on the brink of war in 2009. Measuring a half an acre of land, filled with barren rocks, Migingo is neither the largest nor the most resourceful of Lake Victoria's many islands. However, it is located in a part of the lake that is rich in fish and provides a major source of livelihood for several thousand fishermen from Kenya especially in western Kenya bordering Lake Victoria. This means that the transboundary dispute has compromised economic well-being of those dependent on fishing in Lake Victoria.

Were (2016) study centres on how a varied array of actors interests lead to transboundary dispute over natural resource in this case fish in Lake Vitoria. His study explores how competing interests fuel disputes over shared resources, thus the economic security element is missing.

Owino (2019), however, highlights the economic value that drives the dispute. For instance, between 2000 and 2012, the number of fishers in Uganda almost doubled from 34,000 to 63,921. In Kenya, with 6% of the surface area of the lake, in the same period, the aggregate change ranged from 38,431 to 40,078. The increase in fishers is accompanied by an increase in the number of fish vessels and fishnets. His study argues that of the three countries, Uganda's Nile perch exports have been increasing while those of Kenya and Tanzania have been declining. This can be attributed to Uganda's stringent measures on fishing in the region.

Despite these economic security risks, Uganda and Kenya have yet to agree on demarcating Lake Victoria to establish the territorial extents of each state on the lake. This strikes at the crux of both countries' foreign relations as well as policy. Okoth (1999) argues that the foreign policy of Kenya has attracted differing definitions, but they are nevertheless significant in the sense that foreign policy is characterized by a lot of dynamism. Generally, Okoth (2010) views foreign policy as strategies that governments and states employ to guide their actions outside their territories and how territorial integrity can be realized between and among states. However, Okoth's assertion does not necessarily address economic security in foreign relations of the two countries. Further, Okoth *et al.* (2018), in their book "*Peace Security and Development in the 21st Century Africa,*" do underscores the essentiality of peace in the East African Economic integration. Kenya and Uganda are not an exemption in economic security discourse. Therefore, the gap here is that most studies are focused on territorial integrity and transboundary natural resource management and not the economic security risks that the transboundary dispute poses to the very economic value of these transboundary resources. The study highlights the economic element in transboundary disputes since it focuses on natural resources found on contested spaces such as Lake Victoria.

1.1. Statement of the Problem

The disputes over Lake Victoria resources is basically an epitome of long term resource-use covering fishing access that has grown to involve state organs and the respective local communities (Owino, 2019). According to Were (2016) equitable utilization of Lake Victoria water resources has for a long time not been a matter of concern until several factors connived to make it a problem. The problem burgeoned after the introduction of fish processing factories on the lake shores of Kenya and Uganda. Despite stringent application of containment measures especially from the Ugandan side of the lake, there exists greater fishing pressure and decreased catches in Kenya and Uganda which have resulted to economic risks catalyzed by intense competition over shared resources such that access rights to fishing are denied to some stakeholders. Furthermore, unresolved maritime boundaries may also easily affect bilateral relations or even international peace and security. The periodic violence, murder of fishers, declining catches of Nile perch are symptoms of poor management of economic security of this shared resources on the lake (Warui, 2013). Dispute resolution mechanisms instituted are yet to bear much fruit, for instance, the co-management of Lake Victoria by Kenya and Uganda. The disputes have exacerbated the economic security of the stakeholders on both sides of the common marine border. This includes the declining fish catches culminating into low economic prospects on the Kenyan side of the lake. Investments in fisheries industry on the Kenyan side has also consequently declined or translocate to Uganda in pursuit of the lucrative fisheries market there (MAAIF, 2000). This has further translated into low or unreliable incomes for several Kenya fisher households who are sometimes forced to venture into the risky Ugandan waters of the lake (Government of Kenya, 2016).

1.2. Objective of the Study

To evaluate the contribution of national fisheries policy implementation to economic security management between Kenya and Uganda

1.3. Research Question

What is the contribution of national fisheries policy implementation to economic security management between Kenya and Uganda?

1.4. Justification of the Study

1.4.1. Academic Justification

A number of studies on transboundary dispute around Lake Victoria between Kenya and Uganda exist. [Were \(2016\)](#) study locates the dispute around transboundary natural resource management in a political and international relations perspective. His study delves into the principles of transboundary natural resource management with regard to the state, ideology and power asymmetry in the control and exploitation of the resources of Lake Victoria. On the other hand, [Wekesa \(2010\)](#) argues that the Lake Victoria dispute represents not only a tussle over sovereignty by Kenya and Uganda, but also illustrates the importance of dwindling economic fortunes in shaping political responses in the region. The Migingo confrontation is all about fisheries and specifically about the cause of the lake's declining fish stocks. Therefore, the current study focused on management of economic security in relation to transboundary dispute unlike previous studies that focus on transboundary natural resource management and politics around disputes in border areas.

1.4.2. Philosophical Justification

Natural resources are one of the major concerns of modern societies and it seems as if it is a new trendy concept, as such is the case with Lake Victoria. The reality of the situation is that exploitation and utilization of resources has occurred along Kenya-Uganda history with exploiters taking cornucopian approach, the credence that resources are infinite and therefore the contention to own. The difference between present and past exploitations is that the current exploitation is global, while centuries ago it was local. For instance, there are claims that there is overfishing of certain fish species thus altering the entire ecosystem of Lake Victoria. The study is critical since it contributed towards a better understanding of the transboundary disputes and their management as well as forming a basis for future research.

1.4.3. Policy Justification

There are a number of studies on transboundary dispute around Lake Victoria between Kenya and Uganda. [Were \(2016\)](#) locates the dispute around transboundary natural resource management in a political and international relations perspective and therefore suggest policy guidelines on how to manage transboundary resources. [Okumu \(2010\)](#) and [Wekesa \(2010\)](#) studies, on other hand, explored political security element of this transboundary dispute and thus focused on interstate relations in EAC region. The mentioned studies focus on dispute resolution approaches championed by regional bodies such as the East African Legislative Assembly (EALA) that declared that there was a bilateral issue between Kenya and Uganda ([Warui, 2013](#)). These leave out local communities who are directly involved in the management of border issues rather than leaving this to political elites and central government alone. This study explored broader dispute management mechanisms or policy guidelines with focus the contribution of national fisheries policy implementation to economic security management between Kenya and Uganda.

2. Contribution of National Fisheries Policy Implementation to the Economic Security Management of Water Resources

The global agenda for natural resource management espouses the principle that disputes between riparian states are resolved in a peaceful manner. This requires putting in place mechanisms that recognize the actors and processes for mediating and negotiating transboundary disputes.

[Folke et al. \(2002\)](#) stress that when countries disagree over the way in which water resources of an international river basin should be utilized, they have to resort to some disputes settlement procedures. So, before parties or countries sharing a water system go into a dispute, which may from water security problem lead to a national security problem, there are three main procedures and methods used to find a solution to the problem. These are (1) negotiation and consultation; (2) mediation and conciliation; and (3) arbitration and adjudication. He further argues that dispute over resources shared water bodies can normally arise at least under two different circumstances; one can be riparian states that have never entered a treaty or agreement, while the other can be an existing agreement which cannot provide a binding decision on issues in dispute. This study does not focus on the economic security management although suggested dispute resolutions apply.

[Rahaman \(2009\)](#), concur that statistical analysis of the bilateral and multilateral agreements reached on water resource use in most shared river/Lake basins and international watercourses around the globe highlight "eight core elements." These elements include the equitable use of shared resources, avoidance of causing significant harm to other riparian states, sovereign equality and territorial integrity, information exchange, consultation with other riparian, prior notification, environmental protection and peaceful resolution of disputes.

At the international level, negotiation on water resource disputes have resulted into conventions that serve as yardsticks for partner states that find themselves in such situations. For instance, the 1966 Helsinki Rules and the 1997 UN Watercourses Convention dictates that states should engage preventive diplomatic practices through structured dialogue. The challenge in applying this applicant is built in the *realpolitik* that drives the behavior of states in that they will largely engage other states if, in their own calculations, their national interests are taken care of [Salman \(2007\)](#).

The governments of Canada and the United States have negotiated at least nine treaties or agreements, starting with the U.S.-Canada Boundary Waters Treaty of 1909, governing water pollution of the many rivers and lakes that flow along or across their common border. On the other hand, Israel and Jordan have agreed to share the river. Both countries created storage facilities to hold excess water from rain floods as well as build dams for river flow management. The parties agreed to provide water to one another ([Sangsoo and Alec, 2008](#)).

In terms of environmental conservation, Jordan and Israel are obligated to protect the river from pollution, contamination, or industrial disposal. Furthermore, according to the treaty, the countries will establish a joint water committee to oversee issues regarding the quality of the water ([Hof, 1995](#)). The agreement between these countries is to improve management economic security of the water resource that they share since continued dispute would reduce the same marginally ([Sangsoo and Alec, 2008](#)).

However, different national fishery policies can be a challenge at the border, which makes the cross-border management of natural and environmental resources much more complicated and difficult. For instance, the Tumen River delta has been one of the most typical heterogeneous border-areas in the world. Among the three sovereign countries (China, Russia, and North Korea) under which three parts of the delta area are administered respectively, the socio-economic differences stemming from a transition from the centrally planned economies (CPEs) can be clearly found in that the Russian Federation has adopted a radical strategy so as to quickly transform its socio-economy into a free-market system, while North Korea traditionally remains a virtually intact CPE system, China is nevertheless trying to reform its economy towards a socialist market one. The Tumen River Area Development Program (TRADP), which was announced with much fanfare by the United Nations' Development Program (UNDP) in 1992 as the answer to the development of the Northeast Asian border area, was ever in danger of foundering because of the existing different national policies between the three riparian states (China, Russia, and North Korea) plus South Korea and Mongolia ([Guo, 2005](#)).

2.1. Contribution of National Fisheries Policy Implementation to Economic Security Management between Kenya and Uganda

The Central Government is responsible for the development of rules and regulations and ensuring compliance. It collaborates with the Local/Devolved Governments and BMU leadership in monitoring, control and surveillance (MCS). The MCS systems used to monitor fishing activities including the vetting of fishers, an inspection of fishing gears and vessel, lake patrols, an inspection of catch at landing time, during transportation, in markets and inspection of processing plants. The enforcement measures which are used to ensure compliance with the fishery's regulations include: fines, suspension from fishing, and confiscation of fishing equipment, peer pressure from the community and criminal charges and imprisonment. The frequency of enforcement varies from country to country and may be irregular, thus affecting the rate of compliance. The most non-compliance experienced on Lake Victoria is the use of illegal fishing gears and catching of undersized fish ([Nunan, 2006](#)).

Access to fishing in Lake Victoria occurs through fishing vessel licensing. To obtain a fishing vessel license, one needs to be registered with BMUs, have legal fishing gears and a seaworthy canoe. In March 2018, the Fisheries and Aquaculture Sectoral Council decided to limit the number of fishing vessels for Lake Victoria and for the Nile Perch fishery as per the numbers indicated in the Frame Survey of 2016. Each country is to limit the total number of fishing vessels, including the number of fishing vessels for the Nile Perch fishery, to the numbers they had in their countries as per Frame Survey report of 2016. The incorporation of the decision in national regulations is yet to be done. When implemented, it is expected to control the increase in fishing effort and promote sustainability ([Kyangwa and Geheb, 2000](#)).

The 1964 Fish Act contains no fish rules providing 'fisheries managers with specific areas to enforce - such as, for example, minimum mesh-sizes. Commenting on the Act, the Fisheries Department itself notes, " by current standards [The Act] is neither comprehensive enough nor flexible enough to provide for the proper management and conservation of 'fisheries" ([MAAIF, 2000](#)). As a result, districts have considerable leeway to act on fisheries matters, and are prepared to do so: in 1999, following widespread incidences of fish poisoning, several Ugandan districts unilaterally closed down their Lake Victoria fisheries, and subsequently resisted central government demands that the fishery be reopened. An Important tenet in the management of the fish-poisoning crisis was on Lake Victoria landing sites, which were responsible for trying to control poisoning on the lake. Since the alleviation of the poisoning problem, the opening of the fishery and the recent opening of foreign markets to Nile perch exports from the fishery, these Task Forces have become a permanent 'feature on Uganda's fisheries management landscape, and many have come to be called Landing Management Committees (LMCs) ([Geheb, 2000](#)).

The Kenya fisheries sector has operated without a comprehensive fisheries policy since independence ([Government of Kenya \(2016\)](#)). Fisheries production and management measures were, from time to time however, mentioned in various policy documents. Key among these include the: Various national Development Plans in which the government emphasized fish production from natural waters; National Food Policy (1981 and 1994) in which the importance of fish as a nutritious food commodity was emphasized ([Government of Kenya, 2016](#)).

Co-management is advocated as a means to improve human equity and the ecological sustainability of common-pool resources. The promotion of co-management of fisheries often assumes the participation of resource users in decision-making ensures more ecologically sustainable outcomes than top-down management approaches while improving livelihoods and food security. However, in fisheries co-management approaches, participation is often poorly defined and measured by co-management proponents. For resource users, it may not be clear what their participation in co-management entails, and what such participation might involve or achieve. For the fisheries of Lake Victoria (Kenya), the introduction of co-management established Beach Management Units (BMUs) on a model of participatory decision-making (Kyangwa and Geheb, 2000).

The existing frameworks are inadequate to resolve transboundary dispute of the magnitude of Misingo between Kenya and Uganda. As mentioned, this instruments empowers the member states to “remain free to impose such penalties in accordance with its national laws as it may determine to be necessary to fulfill its obligations” and that “nothing in this Convention shall be interpreted as preventing a Contracting Party from exercising fully its sovereign powers in respect of any of the subject matters of this Convention. This is the case with Lake Victoria where partner states labor to stump their authority in utter disregard of economic security of the resources (Owino, 2019).

Moreover, national interest is discernible further in the attempts to industrialize the fishing sector in both countries. The national fishery policies in Kenya and Uganda are explicit in the utilization of fishery resources obtaining in each partners territory for the benefit of its citizens. In Uganda the policy empowers the various state agencies to enforce the national fisheries policy and especially the ban on whole fish exports to neighboring countries. The fish processing firms depend generally on fish landings from the lake which have prompted fierce competition for access to these resources. Consequences of overexploitation due to the fish race are evident in the respective portions of Lake Victoria in the two countries. This study highlights state sovereignty rights in form of national fishery laws whose effectiveness in managing economic security of transboundary resources is not guaranteed (Okumu, 2011). Therefore, the need for robust negotiations to strengthen management of economic security from a bilateral or regional angle cannot be understated here which is the concern of the current study.

3. Conceptual Framework

Wasike and Odhiambo (2016) discuss the role of theories in guiding the thrust of academic studies. They emphasise the importance of theories in offering compelling and incisive causal explanations with calculated precision. They buttress their argument by quoting Smith (1996) who asserts that theories play the role of predicting, prescribing and evaluating socio-political phenomena hence they cannot be ignored.

3.1. Social Conflict Theory

Marx (1983) is the proponent behind social conflict theory. This theory sees society in a framework of class disputes and focuses on the struggle for scarce resources by different groups in a given society. The theory holds that the most important aspect of social order is the domination of some group by others. Besides, actual or potential disputes are always present in society.

The theory is useful in explaining how the dominant groups use their power to exploit the less powerful groups in society and also access Lake Victoria resources. Karl Marx argues that the more the rate or degree of inequality in the distribution of the relatively available or the scarce resources in the society, the greater is the basic conflict of interest between its dominant and subordinate segments. The more the subordinate segments (proletariat) become aware of their true collective interests, the more likely they are to question the legitimacy of the existing pattern of distribution or allocation of scarce resources.

3.2. The Structural-Functionalist Theory

Parsons (1957) champions the course of this theory. The structural-functionalist theory asserted/projected that individuals will adjust to a given structure in an organization institution or society. Any change in the structure of the organization or institution causes dispute and it destabilizes the organization. Dispute should then be minimized in order to maintain stability with both the individual as well as the institutions. The theory reflects a system approach where each part has one or more functions to perform. The theory sees dispute as dysfunctional, abnormal, and a disease which can be endemic to a society. It focuses on things that will maintain the state of equilibrium and collaboration in the organization (Macionis, 1997).

The structural-functionalist theory sees society as a complex system whose parts work together to promote solidarity and stability; it states that our social lives are guided by social structure, which are relatively stable patterns of social behavior (Macionis, 1997). Social structure is understood in terms of social function, which is a consequence for the operations of society.

3.3. John Burton's Conflict Resolution Theory

Burton (1966) after holding problem-solving workshops in Cyprus and Sri Lanka, Burton helped spread conflict mediation approaches to the global stage. Burton synthesis of the basic principles underlying "human needs theory," a framework for understanding and resolving conflicts, in contrast to a "dispute," which he characterized as a disagreement over values that might be compromised on, a "conflict" involved an action involving one or more of these basic human needs. For Burton, there is a clear difference between conflict resolution and the very similar concepts of conflict management and conflict settlement. According to Burton, settlement simply addresses the surface causes of conflict, but conflict resolution solves deep, seemingly intractable difficulties.

This paper is based on the idea that satisfying basic human needs is a necessary condition for ending violent conflict. Based on the research of American sociologist Paul Sites, Burton identified eight universal wants and added a ninth. Control, safety, fairness, stimulation, a sense of purpose, acceptance, and logic were all included to the list of adopted requirements. The necessity to protect one's position in society was an additional requirement for Burton. Burton labelled these desires as "ontological needs" because, in his view, they were intrinsic to the human condition, were applicable to everyone, and would be pursued no matter the cost.

Scholarship on conflict resolution provides a concise overview of the many approaches to resolving conflicts, such as negotiation, mediation, arbitration, coercion, avoidance, arbitration, adjudication, negotiation, mediation, and reconciliation. According to the outcome of the research, Kenya and Uganda would benefit most from pursuing reconciliation, as demonstrated by the wide range of approaches taken.

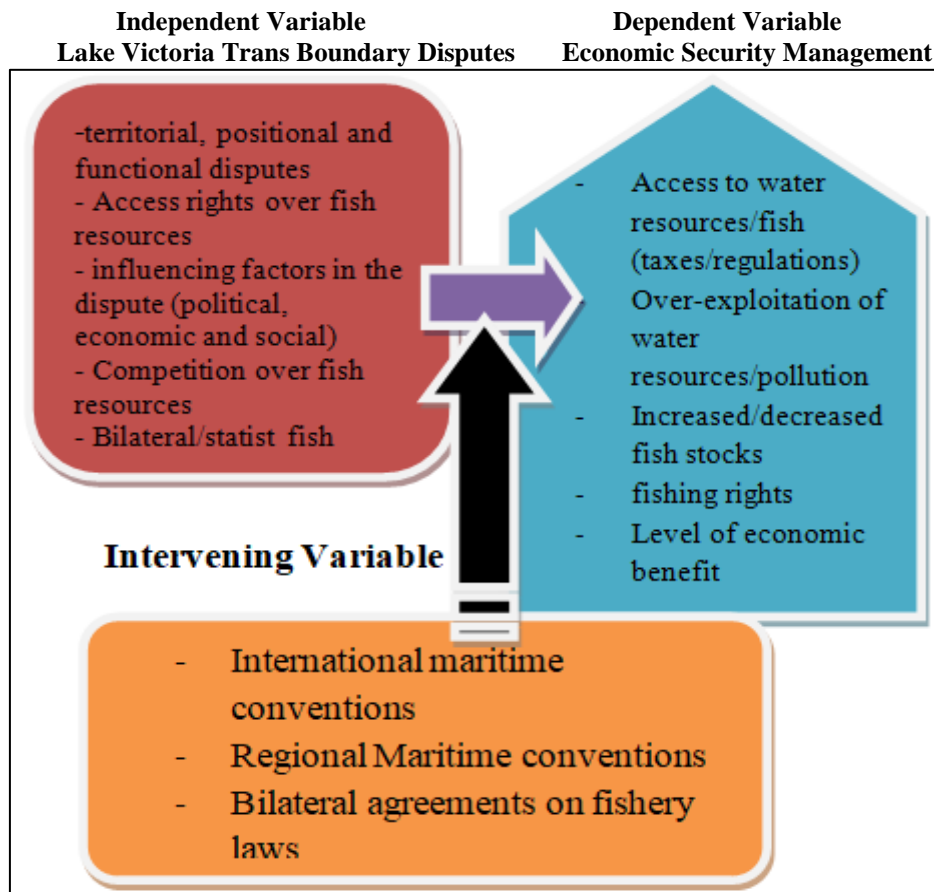


Figure-1. Showing Interaction of Variables
Source: Researcher, 2020

4. Research Methodology

4.1. Research Design

The research used descriptive research design to examine the nature of Lake Victoria transboundary disputes and economic security management between Kenya and Uganda. According [Mugenda and Mugenda \(2003\)](#), descriptive survey data is collected through questionnaires and interview schedule. The purpose of descriptive study is to give accurate account of particular phenomenon such as transboundary dispute and economic security management. It also explains the frequency or events on the proportion of people within a certain population sharing certain views or characteristics.

4.2. Study Area

Lake Victoria, with a surface area of 68 800 km², is the second-largest freshwater body in the world and the largest in Africa. The largest part of the lake, 35 088 km² (51%) is in Tanzania, followed by the Ugandan part 29 584 km² (43%) and the Kenyan part 4128 km² (6%). The lake has a shoreline length of 3 450 km: 1 150 km (33%) in Tanzania, 1 750 km (51%) in Uganda and 550 km (16%) in Kenya. The lake's fishery is dominated by three species: Nile perch (*Lates Niloticus*), Nile Tilapia (*Oreochromins Niloticus*) and Mukene/Dagaa/Omena (*Ratrineobola argentea*) but there is also an upcoming haplochromine fishery especially in the Tanzanian part of the lake. The utilization of the catches is as follows: about 50 percent of Nile Perch is exported, Nile Tilapia is mainly for domestic consumption and regional exports while about 70 percent of Dagaa catches are used for the production of animal feeds ([Kolding et al., 2019](#)).

Fishing takes place in the coastal areas, but the Nile Perch fishers are extending to the deeper waters with reduced catches. The lake has got 1 535 landing sites, and 76 929 fishing canoes operated by 219 919 fishers. The fishery is open to fishers within the fishing communities but also to those within the country so long as they meet the

required conditions, such as being registered with Beach Management Units, having legal fishing gears and seaworthy canoes. Kenya and Tanzania do not allow persons outside the country to own fishing canoes, but in Uganda, non-citizens can pay a special fee to acquire a fishing license (Kolding *et al.*, 2019).

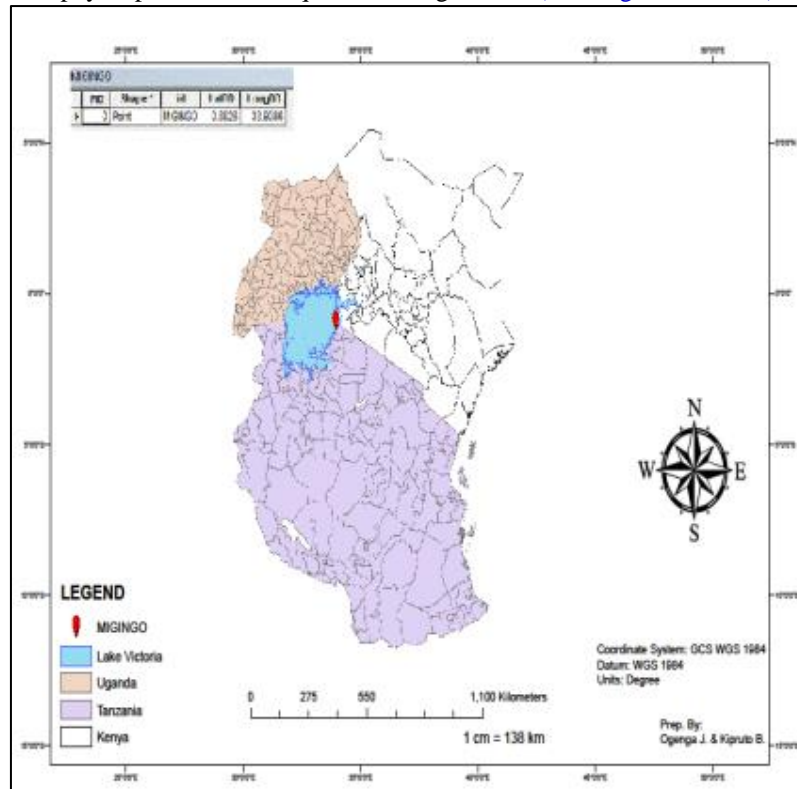


Figure-2. MAP of Lake Victoria
Source: GIS Expert, 2020

4.3. Sampling Strategy and Sample Size Determination

The researcher used the formula provided by Mugenda and Mugenda (2003) in determination of sample size, While in determination of sample size of sub-groups Borg and Gall formula was used (Gall *et al.*, 2007).

Government officers (security personnel and directors of inter-governmental organizations) were allocated 188 informants. The sample size was obtained, through simple random sampling method; lottery method. This is the most popular method and simplest method. In this method the researcher numbered all the items on separate sheet of paper of same size, shape and colour. They were folded and mixed up in a box. A blindfold selection was made. This was done until the 98 humanitarian officers and 98 government officers were obtained which was the desired sample. After obtaining 196 from fishers and fish traders the researcher used purposive sampling to distribute them in Lake Victoria. Simple random sampling technique is an appropriate technique because it ensured that all fishers, fish traders, security personnel and intergovernmental organization directors sampled have an equal chance of being included in the samples that yielded the data generalized within margin of error that was determined statistically (Mugenda and Mugenda, 2003).

4.4. Data Collection Methods

Primary data was collected from the field through structured questionnaires, interview guides, observation checklist, focus group discussion and document analysis. The use of several data collection methods enabled the researcher to avoid the deficiency that springs from using one method of data collection method (Denzin, 1989). To get information on the relationship between quality management systems, the researcher collected both primary and secondary data types (numerical and string data). The researcher visited the sampled population and gave a brief oral explanation of purpose of the study. Finally, the researcher sourced secondary data by analysis of publications such as relevant books, conflict journals, and international maritime laws on water resources in EAC and internationally related legislations and government documents. The researcher sought to specifically determine if the nature and purpose of the said documents would shed more light on the effects of transboundary disputes on economic management of economic security.

4.5. Data Analysis and Presentation

The researcher cleaned data by listing, expunging errors and checking extreme values and edit to ensure conformity. The group survey data was analyzed using SPSS Version 27. The variables were subjected to descriptive statistics. The qualitative data was analyzed by consolidating emerging themes from the key informant interviews, topic analysis, and cut and paste methods on the focus group discussion transcripts. Quantitative data was analyzed using descriptive statistics such as frequencies and percentages. The researcher presented data findings in form of frequency tables, pie charts, bar graphs and narratives.

5. Results

5.1. Socioeconomic Consequences Arising Due to Dearth of National Fisheries Policy Implementation

5.1.1. Loss of Income and livelihood

The study sought to assess whether loss of income and livelihood were prevalent along Lake Victoria Basin. The study established that, out of 355,261 (73.5%) indicated that loss of income and livelihood was prevalent, 73(20.6%) stated that it was less prevalent and 21 (5.9%) reasoned that they were not prevalent. The results are illustrated in table 1.

Table-1. Loss of income and livelihood

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Prevalent	261	73.5	73.5	73.5
	Less Prevalent	73	20.6	20.6	94.1
	Not prevalent	21	5.9	5.9	100.0
	Total	355	100.0	100.0	

Source: Field Data, 2021

The antecedent findings agree with. In most developing countries, small scale fisheries do not have the necessary skills to access more lucrative sectors of the economy and get high income to sustain their dependents instead they depend on nature of both marine and inland water capture fisheries which carried as occupational of hunting and gathering that leads to low income and in turn makes fishers live in poverty. The low income earned by fishers is related to exploitation by middlemen (Abila *et al.*, 2000), unfavourable weather fishing weather conditions (Abila *et al.*, 2000). The exploitation by the middlemen leads to low income that cannot make their household live in a better condition and during bad weather fishers will have a rough time during fishing hence have less catch. The signs of low income of fishers are explained by Abila *et al.* (2000), when you look at the fishers in the beaches, they look very weak, poorly dressed, drunk and live in poor housing structure.

This captured by Wakhungu and Odhiambo (2021) in their article “Geo-Political factors Influencing Kenya and Tanzania Foreign Policy Behaviour Since 1967” when they wrote that:

“The fundamental geopolitical factors that have been central in shaping Kenya’s foreign policy posture since independence are: the Indian Ocean and the struggle of the big powers; Kenya’s location near the volatile and strategic Horn of Africa; the Nile River basin and Egypt’s ambitions; great powers struggle for resources and influence in Africa; war on terror; instability in the Great Lakes region; and discovery of fossil fuels in East Africa”.

However, other researches contend that livelihood diversification as a process from which a given society built on a growing different portfolio of assets and activities to survive and increase their living standards is important (Ellis, 2000). Livelihood diversification is a process by which households engage in a multiple income generating activities (Brugere *et al.*, 2008). The livelihood diversification can only be achieved by improving people’s livelihood chances, developing a free flow of incomes in the rural areas, increasing human capital and decreasing dependency on one kind of natural resource and realizing economic security (Ellis and Allison, 2004). The small-scale fishers in Misingo and Mageta islands as other small-scale fishers in the developing countries use fishery as livelihoods plus other livelihoods to supplement or alternative livelihoods to reduce poverty (Odhiambo, 2013). Therefore, there is need to generate specific knowledge to guide development of livelihood diversification to enable the communities affected by the over-dependence on one kind of livelihood which makes them more vulnerable to poverty and lack resilience to poverty. The study aimed at generating new knowledge on managing transboundary disputing in enhancing economic security and bolstering the fishers’ livelihoods along Lake Victoria Basin.

Besides, the poor living conditions of almost all fishing communities in Uganda are extremely very poor (NEMA, 2002). In 1994, 65% of all the landing sites reported poor conditions. Due to poor sanitation, there is high likelihood of prevalence of a number of diseases such as malaria and other waterborne diseases including dysentery, bilharzias, diarrhea and sometimes cholera and typhoid let alone HIV/AIDS. Just like their counterparts in some other parts of the world, the fishermen in Uganda are generally very poor people (Muhoozi, 2002). Although the fishermen are assured of a daily income, they still remain below the poverty line (Muhoozi, 2002). One of the methods such as smoking that they use to preserve the fish not only poses a health hazard but also, to some extent, is the major cause of localised deforestation for fuel wood used in fish smoking (NEMA National Environment Management Authority, 2006). A study by Omwega *et al.* (2005) revealed that fishing is an important source of livelihood for many Kenyans for many years.

5.1.2. Unemployment

The study sought to assess whether unemployment was prevalent along Lake Victoria Basin. The study established that, out of 355,231 (65.1%) indicated that unemployment was prevalent, 101 (28.5%) stated that it was less prevalent and 23(6.5%) reasoned that it was not prevalent. The results are illustrated in table 2.

Table-2. Unemployment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Prevalent	231	65.1	65.1	65.1
	Less Prevalent	101	28.5	28.5	93.5
	Not Prevalent	23	6.5	6.5	100.0
	Total	355	100.0	100.0	

Source: Field Data, 2021

The immediate findings are in resonance with various scholarly works. The high rate of unemployment in the developing is a challenge to fishing industry in most countries, everyone considering fishing as the only source of livelihood. FAO (1998), argues that population pressures and shortages of alternative employment opportunities has attracted many people to fisheries and lack of effective conservation and management policies have increased the attraction of people to the fisheries as they consider the last resort employment opportunity. According Kofie (2005), over fishing is a major challenge in Ghana due to lack of employment opportunity in the formal sectors as many people turn to fisheries as the last resort. Fishing as the last resort has resulted to reduction in income, profit, increased competition and conflicts over fishing grounds. According to conference paper no. (13), high growth rate has put pressure on natural resources. This is evident by, the increasing number of those involved in fishing industry now, putting pressure on fish stocks and declining fish stocks. The lake waters are subjected to increasing environmental threats like industrialization, deforestation, agricultural expansion and increasing urbanization (Scullion, 2013). The sustainability of fisheries resources is basically challenged by the human increase in population and the intensive land use along the lake catchment areas. According to the Ministry of Livestock, Fisheries and Agriculture the number of fishers in Lake Victoria has increased by (4.3%) from (2000-2012) and the number of crafts have increased by (17.0%) from (2000– 2012) (MoALF, 2015).

5.1.3. Dispute Over Resources

The study sought to assess whether dispute over resources was prevalent along Lake Victoria Basin. The study established that, out of 355,301(84.8%) indicated that dispute over resources was prevalent, 31(8.7%) stated that it was less prevalent and 23(6.5%) reasoned that it was not prevalent. The results are illustrated in table 2.

Table-3. Dispute over resources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Prevalent	301	84.8	84.8	84.8
	Less Prevalent	31	8.7	8.7	93.5
	Not Prevalent	23	6.5	6.5	100.0
	Total	355	100.0	100.0	

Source: Field Data, 2021

Odada *et al.* (2004) argues that over the years, Lake Victoria has come under considerable pressure from a variety of interlinked human activities such as overfishing, growth and invasion of the deadly water hyacinth, eutrophication and industrial pollution. This is because the lake is shared among three countries that is; Kenya having approximately 6%; Uganda has about 43% while Tanzania boasts of 51% ownership of the lake. River Kagera – the principal affluent river runs through the countries of Rwanda and Burundi has inevitably been the bone of contention among these three East African countries that share the lake. Okedi argues that the case of Lake Victoria, has been worsened by the fact that the Lake supports a population of over 31 million with a depleted fish species from over 500 (most being cichlids) species to three species of Nile Perch (*Lates Niloticus*) Nile Tilapia (*Oreochromis niloticus*) and the Dagaa (*Rastroneobola argentea*) to serve as a delicacy and a reliable source of economic empowerment to the locals. The situation around the lake is further complicate due to the fact it is used by the three countries for domestic, transport and industrial use and is a source of the Mighty Nile which is a life line to ten riparian countries. He further expounds that the threats to Lake Victoria has been the decline of fisheries as a result of disappearance of endemic fish species.

There have been reports that conflict within the East African region over Lake Victoria may arise from lack of effective government coordination and law enforcement escalating between economic actors, sectors and levels of governments. A case in point is the fact fishing in the lake, increased competition among fishers and fish processing agents. This has given rise to conflict over national control of lake waters which has led to the formation of Lake Victoria Environmental Management Project (LVEMP) and Lake Victoria Fisheries Organization (LVFO) with the aim of enhancing the governance from the early 1990's.

5.2. Statutory Instruments' Contribution of Fisheries to Public Revenues of Both Kenya and Uganda

Statutory instruments are known to regulate on fishing operations or the conduct of fishing. The fishers involved, where they are involved and levels of exploitation .For these reasons this study sought to establish the primacy of statutory instruments and their contribution to fisheries as public revenues of both Kenya and Uganda on Lake Victoria, whether very high, high or not high. The study found out that, out of 355, 283 (79.72%) of the total respondents stated that, vessel licence fees were very high,61 (17.18%) stated that they were high and 11 (3.09%) reasoned that they were not high.Besides,217 (61.13%) stated that fishing fees were very high,131(36.90%)

reasoned that they were high and 7(1.97%) stated that they were not high. Additionally, 205(57.75%) averred that fish trading fees were very high, 111(31.27%) stated that they were high and 39 (10.98%) reasoned that they were not high. Regarding fish transport fees, 161 (45.35%) stated that they were very high, 153 (43.09%) reasoned that they were high and 41(11.55%) stated that they were not high. When asked about market dues, 197 (55.49%) stated that they were very high and 121 (34.09%) affirmed that they were high and only 37 (10.42%) stated that they were not high. Regarding fines and permits of various sorts, 210 (56.62%) reasoned that they were very high and 117 (32.95%) opined that they were high .Only 37 (10.42%) were of the contrary opinion. The results are illustrated in figure 3.

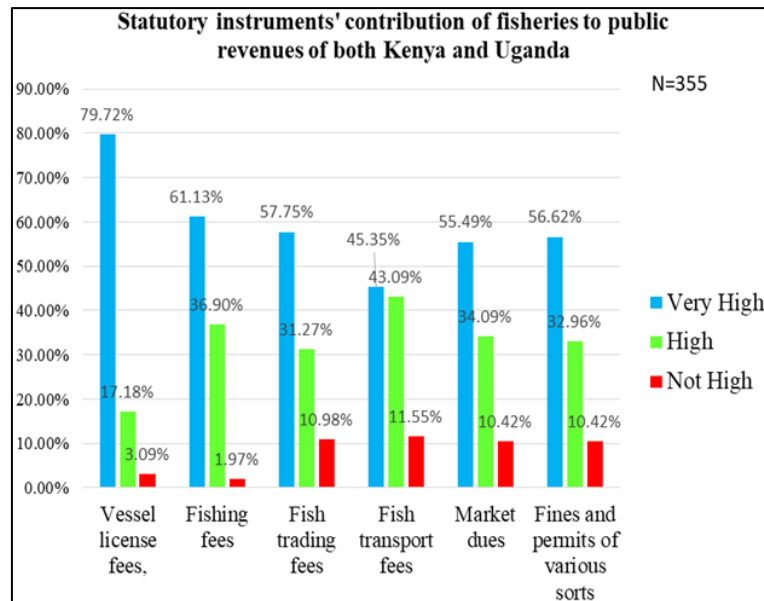


Figure-3. Statutory instruments' contribution of fisheries to public revenues of both Kenya and Uganda
Source: Field Data, 2021

Efforts to set up relevant management institutions for inland water transport have largely been initiated by regional entities such as; Kagera Basin Organisation, United Nations Economic Commission for Africa, Economic Community of Great Lakes States, Nile Basin Initiative, Nile Equatorial Lakes Subsidiary Action Program, Common Markets for Eastern and Southern Africa among others. At the Eastern Africa Ministerial Conference on the New Partnership for Africa's Development held in Kampala in March 2002, regional priorities in the water transport that are relevant to this study were identified as reducing the average age of Merchant ships, promoting maritime safety as well as the need to review, rationalize and harmonize the existing Water Transport legislation and policies. Under COMESA, in the area of inland waterway transport, member states with common navigable inland water ways resolved to adopt, harmonize and simplify rules, regulations and administrative procedures governing their inter-state water ways transport. They also agreed to cooperate to ensure maritime safety on such water ways. In East Africa, the Lake Victoria Basin Commission, a permanent apex institution of the East African Community is mandated to promote and coordinate sustainable development and management of the Lake Victoria Basin. It was established in July 2005 under Article 33 of the Protocol for the Sustainable Development of the Lake Victoria Basin 2003. The LVBC Secretariat located in Kisumu, Kenya, is an executive arm of the East African Community. LVBC is mandated to enhance maritime security and promote safety of navigation on Lake Victoria through the treaty for the establishment of the EAC and Article 31 of the Protocol for Sustainable Development of LVB. The LVBC functions in the Partner States through the designated Maritime Administrative Units. The LVBC Secretariat is also responsible for the coordination and implementation of the Lake Victoria Transport Act on a regional and national basis.

Further, the Lake Victoria Transport Act takes precedence over any national legislation as regards any matter to which the Act relates. This is provided for in Section 247 of the Act. In principle, this means that in the instance of any national law providing for any matter upon which the Act also provides, and which national law is inconsistent with the provisions of the Act as regards that specific matter, then the provisions of the Act will take precedence over those of the national law. Or in other words the provisions of the national law will be null and void to the extent of their inconsistency with the provisions of the Lake Victoria Transport Act.

In Kenya, the Merchant Shipping Act Cap 389 provides for the registration and licensing of Kenyan ships, the training and the terms of engagement of masters and seafarers and matters ancillary thereto; the prevention of collisions, the safety of navigation, the safety of cargoes, carriage of bulk and dangerous cargoes and generally the consolidation of the law relating to shipping and for connected purposes. The Act applies to regulation of ships in Inland waters. It is important to note that this law is quite recent; it was only passed in 2009.

In Uganda, the legal instruments for inland water transport are; the Ferries Act Cap 350, the Vessels (Registration) Act Cap 349 and the Inland Water Transport (Control) Act Cap 348. The Ferries Act provides for the rules for the use of a special flag, forfeiture of license, fees, and auctioning of rights to run a ferry. The Inland Water Transport Act sets the regulations for licensing of ships while the Vessels (Registration) Act establishes the

obligation to register all classes of vessels. However, these laws have been described as disjointed and under the responsibility of numerous institutions, not harmonized and contradictory as well as archaic and dormant. Therefore it has been recommended that these laws should be repealed.

Concerning the fisheries sector, the FAO suggest several criteria and indicators that can be used to measure to what extent sustainable development has been accomplished. For instance, in terms of social aspects, the criteria can be with regards to the safety of the fishing vessels and its associated indicator could be the percentages in relation to the loss of life and boats in a year (Garcia, 1996). According to the FAO, these criteria and associated indicators have been established to ensure the following aspects are achieved in the fisheries sector; specifically: 1) the fulfilment of human needs for all generations, 2) socially acceptable conditions, 3) the preservation of the environment, including its organisms, 4) the use of appropriate technology, and 5) economically viable exploitation, (Garcia, 1996). Based on the suggestions of the FAO related to the criteria for sustainability assessment, the sustainability of the fishing vessels could also be assessed by selecting the appropriate criteria and indicators. Utne (2008a) applied 7 criteria to assess the management of Norwegian fishing vessels, based on the objectives of Norway's sustainable fisheries management. These attributes, including risk of accidents, profitability, employment, fish quality, catch capacity, greenhouse (GHG) emissions and bycatch (Utne, 2008a). Each of these criteria could basically be classified into elements of the three pillars: risk of accidents and employment, as a part of the social aspect; profitability and fish quality, as the economic dimension; whereas the environment feature is reflected in the catch capacity, GHG emissions and bycatch fish rate (Utne, 2008b).

Crilly and Esteban (2013) compared the impact of social, environmental and economic aspects of both small and large-scale fishing fleets in the United Kingdom's North Sea cod fishing sector, in order to determine which size of fishing fleet is the more sustainable in this particular area. Regarding this specific assessment, several criteria including GHG emissions, employment, subsidies, discard rate and productivity had been applied in order to obtain a more sustainable fishing fleet. Given the above description, similar criteria could be used as guidance in order to develop fishing vessels that are designed to facilitate sustainable operations. These criteria, which reflect the implementation of the three pillars of sustainability, could be applied when identifying the requirements and considerations in order to design a sustainable fishing vessel.

By considering the aforementioned idea related to the concept of vessels that can support the achievement of the manageability of the fisheries sector, a sustainable fishing vessel could be simply defined, as a vessel that reflects the consideration and implementation of the three pillars of sustainability throughout its life cycle, from construction through to eventual disposal of the vessel. Specifically, the characteristics of the vessel can be identified as potential solutions for any issues related to the environment, as well as social and economic aspects within the fisheries sector. Firstly, concerning environmental issues, the vessel should have a minimum negative impact on the natural environment, not only regarding the impact from the operation of the vessel, but also the impact from manufacturing the vessel, its through life maintenance and its eventual scrapping. For instance, the building of the vessels should use environmentally-friendly fabrication methods and construction materials. Moreover, the technology employed on board should minimise the degradation of the quality of the environment, by having minimum emissions, minimum water pollution, and be energy efficient. In addition, the selected fishing gear applied on board should reduce the likelihood of the unintended catch of non-target species and avoid damage to the environment caused by the way the fishing gear is operated. Secondly, with regard to social concerns, the sustainable fishing vessel should be able to fulfil the requirements of the fishers and their fishing communities. The design of the vessel therefore should consider the characteristics of local fishers, who will operate the vessels.

Another project also under the supervision of the FAO was the Regional Fisheries Livelihoods Programme for South and Southeast Asia (RFLP), which was conducted from 2009 to 2013. The RFLP was established with the purpose of enhancing the livelihood of small-scale fishing communities in Cambodia, Indonesia, the Philippines, Sri Lanka, Timor-Leste and Vietnam, while simultaneously enhancing the awareness of local fishers in implementing more responsible fishing practices (FAO, 2015c). One of the findings during these FAO programmes was connected to how the affordability of the new technology frequently became an obstacle to its potential implementation. For instance, measures to implement alternative construction materials were inhibited by the high first cost of implementing alternative materials, which local fishers could not afford. According to the FAO's project, many fishing communities on the east coast of India experienced challenges in obtaining certain types of wood of the required quality for the hull construction of the traditional fishing boat, moreover, the price of wood continued to rise each year. Under the supervision of BOBP, several potential alternative materials were evaluated. However, wood is still the least expensive material and local fishers have difficulty in affording the initial cost of alternative materials, such as FRP and aluminium. Therefore, the recommendation of the project was to apply the closest alternative material, which is laminated wood, and also of guaranteeing timber supply in the future by developing improved forest planting management (BOBP Bay of Bengal Programme, 1980).

6. Summary and Conclusion

On evaluating whether loss of income and livelihood were prevalent along Lake Victoria Basin, the study established that, out of 355,73.5% indicated that loss of income and livelihood was prevalent, 20.6% stated that it was less prevalent and 5.9% reasoned that they were not prevalent. On evaluation of whether unemployment was prevalent along Lake Victoria Basin. The study established that, out of 355, 65.1% indicated that unemployment was prevalent,28.5% stated that it was less prevalent and 6.5% reasoned that it was not prevalent.

On evaluating the primacy of statutory instruments and their contribution to fisheries as public revenues of both Kenya and Uganda on Lake Victoria, The study found that, out of 355,79.72% of the total respondents stated that,

vessel licence fees were very high, 17.18% stated that they were high and 3.09% reasoned that they were not high. Besides, 61.13% stated that fishing fees were very high, 36.90% reasoned that they were high and 1.97% stated that they were not high.

Obonyo *et al.* (2010) in their published proceedings “Cartography as a tool for Conflict Analysis & Resolution for Misingo Island Ownership Dispute”, they recommended that: “Cartography should always be used to solve territorial dispute between countries instead of going to war”.

Recommendation

The study recommends a robust reform in the national policies on fishery by both Kenya and Uganda to militate against the Lake Victoria transboundary dispute and bolster economic security management. The statutory instruments for fishing should be revised to provide an enabling fishing environment for fishers and fish traders.

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